No. of Printed Pages : 3

BIELE-006

DIPLOMA – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (DECVI)

00426

Term-End Examination

June, 2016

BIELE-006 : ELECTRONIC PRODUCT DESIGN

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks. Use of scientific calculator is permitted.*

1. (a) Explain how can a zener diode be used as a voltage regulator. 7

(b) Draw and explain the block diagram of a typical linear regulated power supply. 7

2. (a) Discuss the uses of fuses in a circuit. Explain the working of over voltage protection circuit. 7

(b) Derive the expression for the power dissipation in a linear regulated power supply. 7

3. (a) Which one is preferred in FSM design, Mealy or Moore machines ? Why ? 7

(b) Explain ROM, PROM, EPROM and E^2PROM with their applications and advantages. 7

4. (a) Design a generalized 4-bit sequence generator. 7

(b) Explain the working of a traffic controller with the help of ASM technique. 7

5. (a) Draw the circuit diagram of a unity gain Sallen-Key LP filter with its transfer function. 7

(b) Design a second order Butterworth low pass active filter for a higher cut-off frequency of 1 kHz. 7

6. (a) Discuss briefly about cascading of filters for higher order filter design. 7

(b) Explain KRC filters realization techniques. 7

7. (a) Draw and explain the block diagram of a Data Acquisition System. Also write its various applications. 7

(b) What are the criteria to select a suitable Analog-to-Digital converter for a microcontroller based Data Acquisition System ? 7

8. Write short notes on any ***two*** of the following : *2×7=14*

(a) Thermal Consideration in Power Supply

(b) Sequence Detector

(c) PLDs

(d) Sensitivity Analysis in Analog Filters